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September 17, 2003

TO ALL POTENTIAL OFFERORS:

EXPRESSION OF INTEREST - Distributed Energy Systems Application Integration

UT-Battelle, LLC (the "Company"), acting under its Prime Contract No. DE-AC05-00-OR22725 with the Department of Energy (DOE), is requesting an expression of interest (EOI) from potential participants interested in accelerating or pursuing technology development projects in the following area: integrated distributed energy systems application. The Company intends to issue a Request for Proposal (RFP) per the attached Statement of Work (SOW) dated August 28, 2003, sometime this fall and to award multiple subcontracts as a result of this RFP based on the quality of the proposals received and the availability of funds. This EOI is issued to determine the breadth and level of interest and to enable organizations to consider potential "teaming" arrangements and contact prospective partners and/or team members in advance of receiving the RFP.

The scope of the RFP is to encourage the widespread adoption and implementation of integrated distributed energy resources in applications where the coincident use of electricity and thermal energy are present. These sites provide the opportunity to fully use the energy contained in a primary fuel while reducing demand for scarce national resources and fossil-fuel emissions. This program is anticipated to take from one to three years to complete. Cooperative/collaborative projects involving combinations of end-users, equipment manufacturers and suppliers, utilities and other energy providers, engineering firms, trade associations, and/or other entities are encouraged. A required participant/partner in any proposal must be an equipment manufacturer or supplier of integrated, pre-engineered distributed energy systems (as discussed in the attached SOW).

Proposal evaluation criteria may include the following factors: (1) overall technical approach and understanding; (2) personnel qualifications and corporate experience; (3) project management approach and team capabilities; and (4) approach for dissemination of project information and results.

Cost sharing of at least 50% (in-kind support, equipment, or services, etc.) of the total project cost is required. All cost sharing must come from non-federal sources. Any subcontracts awarded for this program will be incrementally funded. This EOI infers no commitment to issue an RFP or to make any awards. Any and all costs associated with the preparation of responses to this EOI are the sole responsibility of the respondent.

All interested parties who wish to receive the RFP must notify me via email or fax by October 31, 2003. My email address is collinsmk@ornl.gov or fax (865) 241-2426.

Sincerely,

M. Kathryn Collins, C.P.M.
Subcontract Administrator

STATEMENT OF WORK

Distributed Energy Systems Applications Integration

August 28, 2003

I. Summary

Oak Ridge National Laboratory (ORNL), in support of the U.S. Department of Energy's (DOE) Distributed Energy Resources (DER) Program in the Office of Energy Efficiency and Renewable Energy, is interested in projects that will encourage further widespread adoption and implementation of integrated distributed energy systems consisting of distributed electrical generators (prime movers) combined with equipment utilizing the thermal energy produced by the prime mover.

Integration of such equipment provides not only electricity but also heating and cooling resources (i.e., combined heat and power [CHP]), which dramatically improves overall energy efficiency and fuel utilization. As DOE's goal is to achieve 70% useful energy utilization from the input fuel energy, ORNL is interested in projects that will have high overall fuel efficiency (i.e., a high proportion of fuel energy going to electricity production and useful thermal application). This activity is intended to encourage the expanded use of distributed energy technologies in applications where there is a suitable combination and coincidence of electrical and thermal demand. Applications which are of specific interest are healthcare (e.g., hospitals), education (e.g., secondary schools, colleges, universities), hotels, and grocery/supermarket facilities. Additional information on these markets can be found in previous DOE studies.[1,2,3,4] Other applications may be considered, if sufficient DOE funding is available.

Projects must address design and engineering, equipment integration and control, and performance monitoring of DER/CHP in an appropriate application. Any number and type of high-efficiency, low-emission, fuel-flexible (e.g., natural gas/landfill gas) distributed energy resources are allowable including, but not limited to, gas turbines, fuel cells, reciprocating engines, and energy storage devices. The individual unit capacity of the prime mover must be more than 25 kWe and less than 5 MWe; however, combinations of units, each within the above range, will be considered. Use of DER to efficiently utilize thermal resources (e.g., cooling, heating and dehumidification), as well as generate electrical power, is required. Allowable forms of thermal utilization include, but are not limited to, absorption chilling, thermally-activated desiccation, and process or space heating.

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1 Integrated Energy Systems (IES) for Buildings: A Market Assessment, Resource Dynamics Corporation, August 2002, http://www.eere.energy.gov/der/pdfs/ies_report.pdf.
2 Market Potential for Advanced Thermally Activated CHP in Five National Account Sectors, Energy and Environmental Analysis, Inc., May 2003, http://www.eere.energy.gov/der/pdfs/market_potential.pdf.
3 National Account Sector Energy Profiles, Energy and Environmental Analysis, Inc., May 2003, http://www.eere.energy.gov/der/chp/pdfs/national_accounts.pdf.
4 The Market and Technical Potential for Combined Heat and Power in the Commercial/Institutional Sector, ONSITE SYCOM Energy Corporation, Prepared for: U.S. Department of Energy, Energy Information Administration, January 2000, http://www.eere.energy.gov/der/chp/pdfs/eiacom.pdf

The results and experiences from these efforts must be disseminated to encourage other entities to adopt and implement DER/CHP.

II. OBJECTIVE

This activity is intended to facilitate the widespread adoption and implementation of distributed energy resources in applications where the coincident use of electricity and thermal energy is present. Such sites provide the opportunity to more fully utilize the energy contained in a primary fuel, thus reducing the demand for scarce natural resources and reducing fossil-fuel emissions.

III. SOW REQUIREMENTS

As an expansion of the material provided in the above Summary, the following points seek to clarify the interest and intent of this statement of work.

- Individual unit capacity of the prime mover (i.e., distributed generation source) must be more than 25 kWe net electric and less than 5 MW net electric. Combinations of units, whose individual capacity is within this range, will be considered, provided there is appropriate utilization of the resulting thermal energy of the combined system.

- Potential projects must utilize new or novel technologies or DER technologies in new or novel combinations that yield high overall fuel efficiency. The projects must utilize to the greatest extent possible pre-engineered, integrated systems to minimize capital costs.

- Utilization of the results of prior DOE-funded activities on integrated distributed energy systems is encouraged. Additional information on these activities can be found at this web site: http://www.eere.energy.gov/der/bchp_packaged.html.

- Projects must have the potential for widespread replicability without subsequent government funding.

- The project and its operational performance must be documented and disseminated. Dissemination of results via trade associations or other consortia is required. Performance data collection must follow a data collection protocol to be defined by the Company.

- Projects must be fully completed, including all documentation, within three years of the start of the contract. However, projects may be of shorter duration.

- Future projects may be considered as optional work.